GENERAL EQUILIBRIUM IN CLOSED/OPEN ECONOMIES

(1) CLOSED ECONOMY/AUTARKY

- 2 goods, X (non-food), Y (food)

- 2 factors of production, K (capital), L (labor)

- Markets are perfectly competitive

Conditions for general equilibrium:

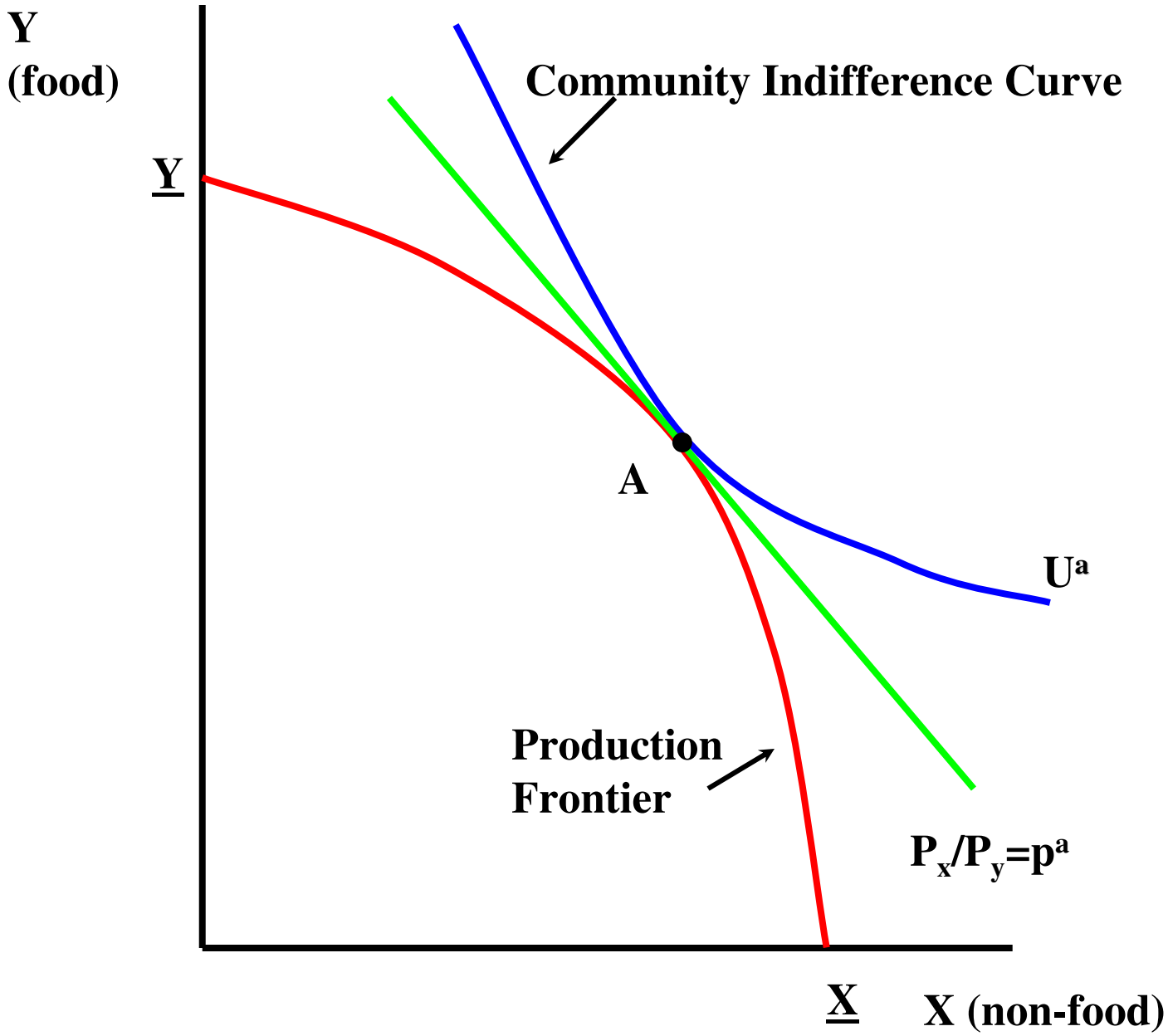
$$P_x/P_y = MRT \qquad (1)$$

$$P_x/P_y = MRS \qquad (2)$$

$$X_c = X_p\,, \quad Y_c = Y_p \qquad (3)$$

where P_x and P_y are prices, X_c and Y_c are demands for goods, and X_p and Y_p are supplies

FIGURE 1: CLOSED ECONOMY EQUILIBRIUM



$P_x/P_y = p^a$ = autarky prices

(2) TRADING ECONOMY

Suppose world prices $p^* = P_x^*/P_y^*$

***Trade balance* condition is:**

$$P_x^*(X_c - X_p) + P_y^*(Y_c - Y_p) = 0 \qquad (4)$$

where $(X_c - X_p)$ and $(Y_c - Y_p)$ are *excess demands*

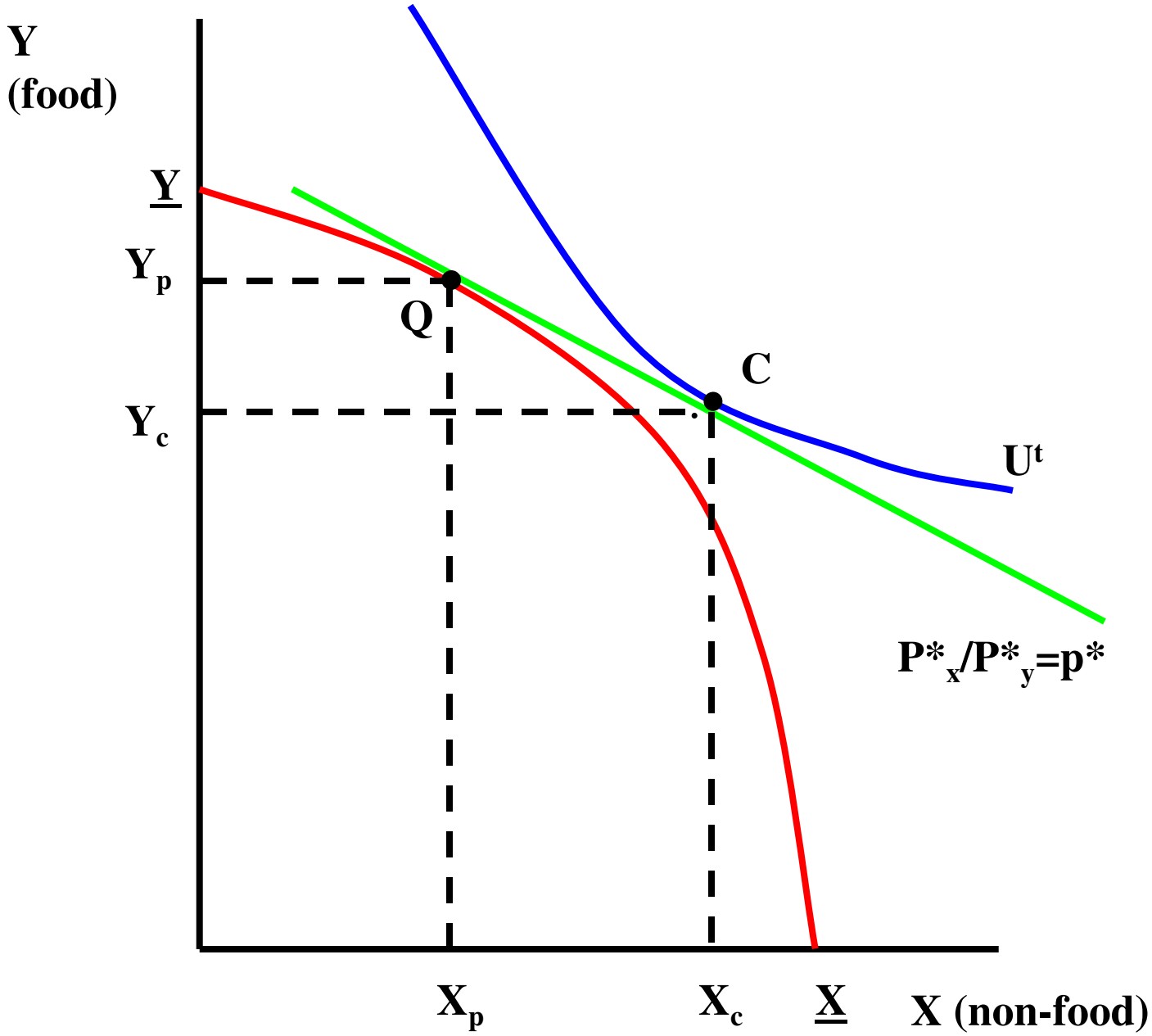
- **if $X_c > X_p$, good X is imported, i.e. *positive* excess demand**
- **if $Y_c < Y_p$, good Y is exported, i.e. *negative* excess demand**

(4) can be re-arranged as:

$$P_x^*X_p + P_y^*Y_p = P_x^*X_c + P_y^*Y_c \qquad (5)$$

i.e. at world prices, the value of production should equal the value of consumption

FIGURE 2: TRADING ECONOMY EQUILIBRIUM



$P^*_x/P^*_y = p^* =$ world prices

FIGURE 3: TRADING EQUILIBRIA

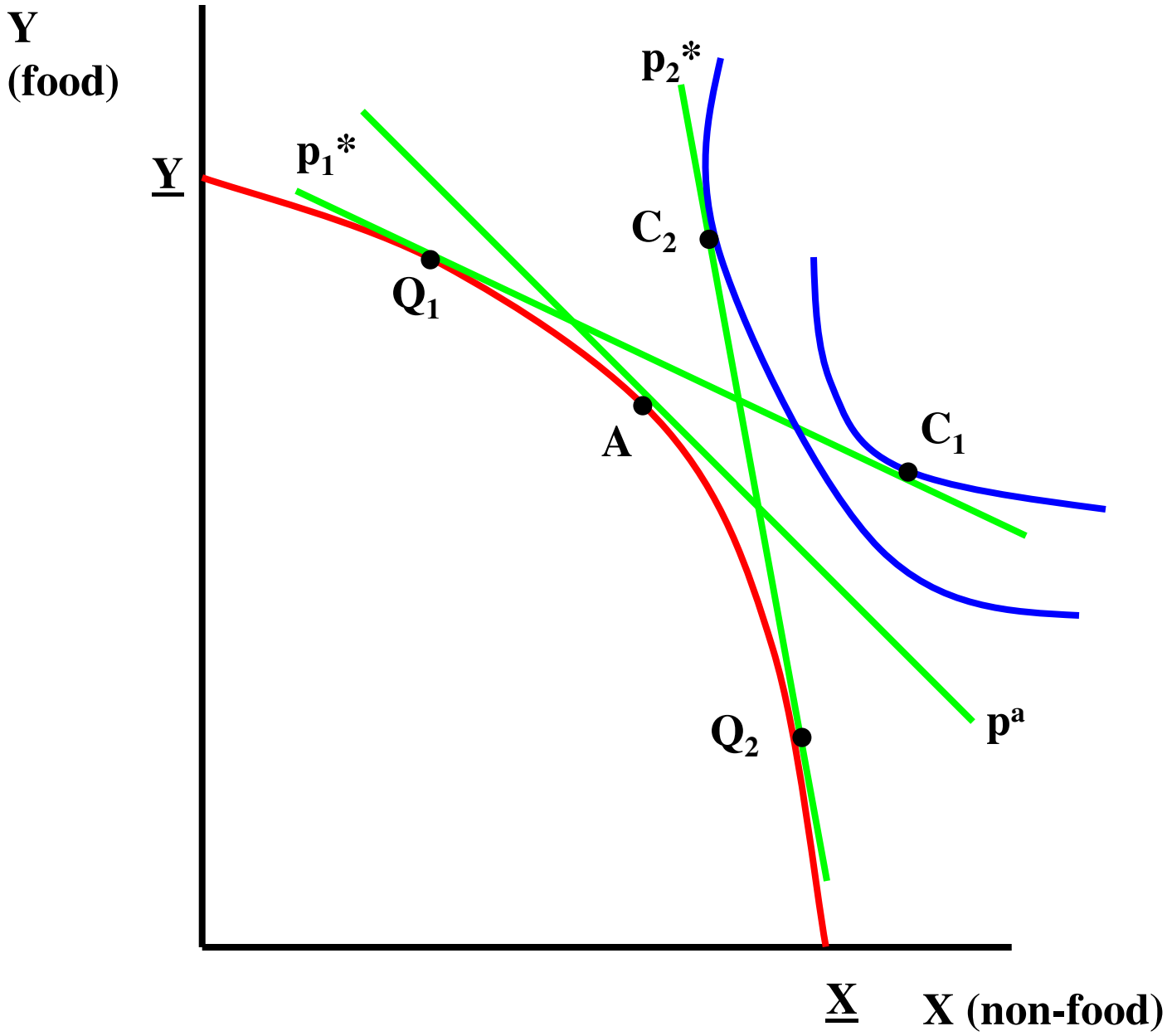


FIGURE 4: EXCESS DEMAND FOR X

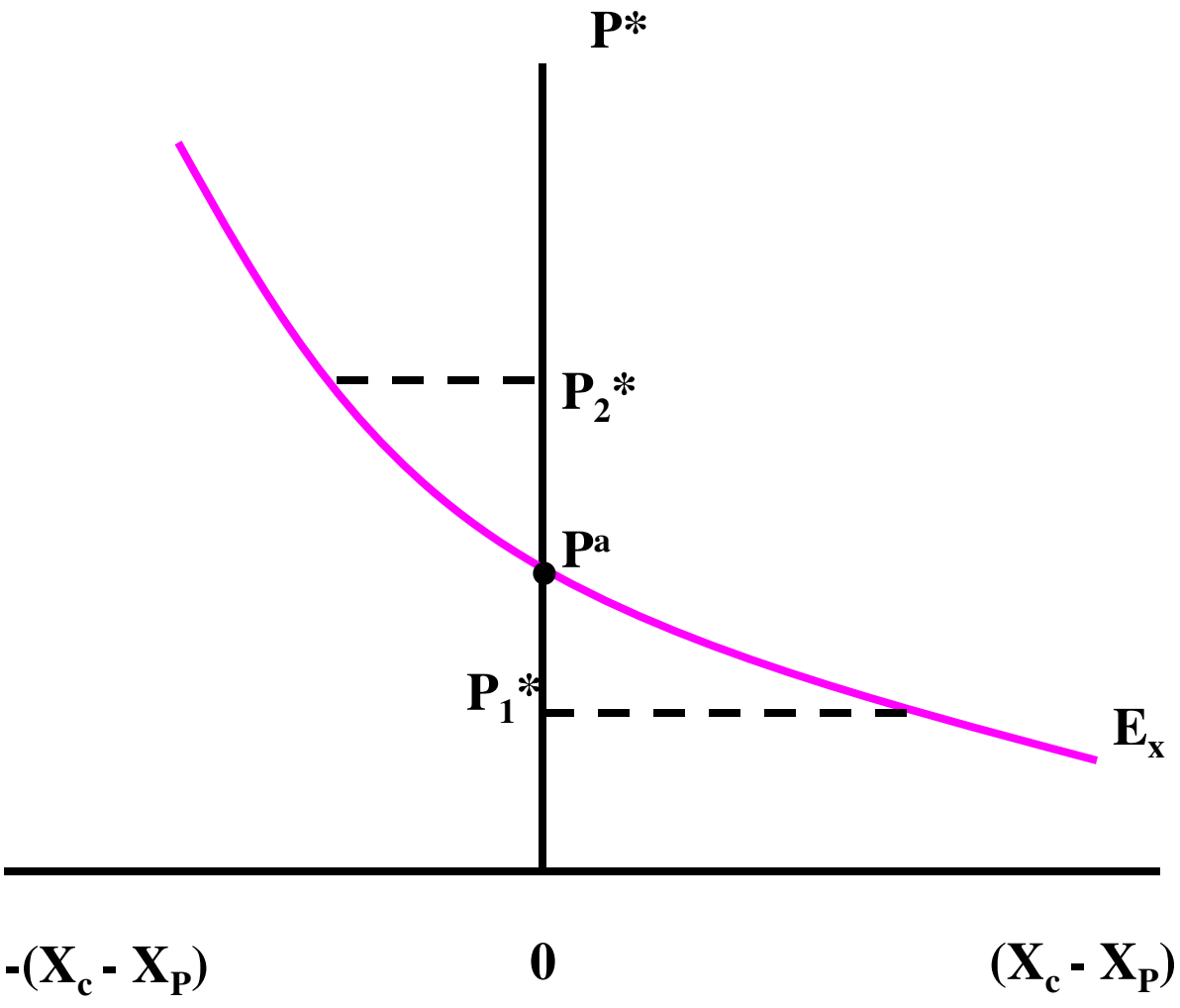
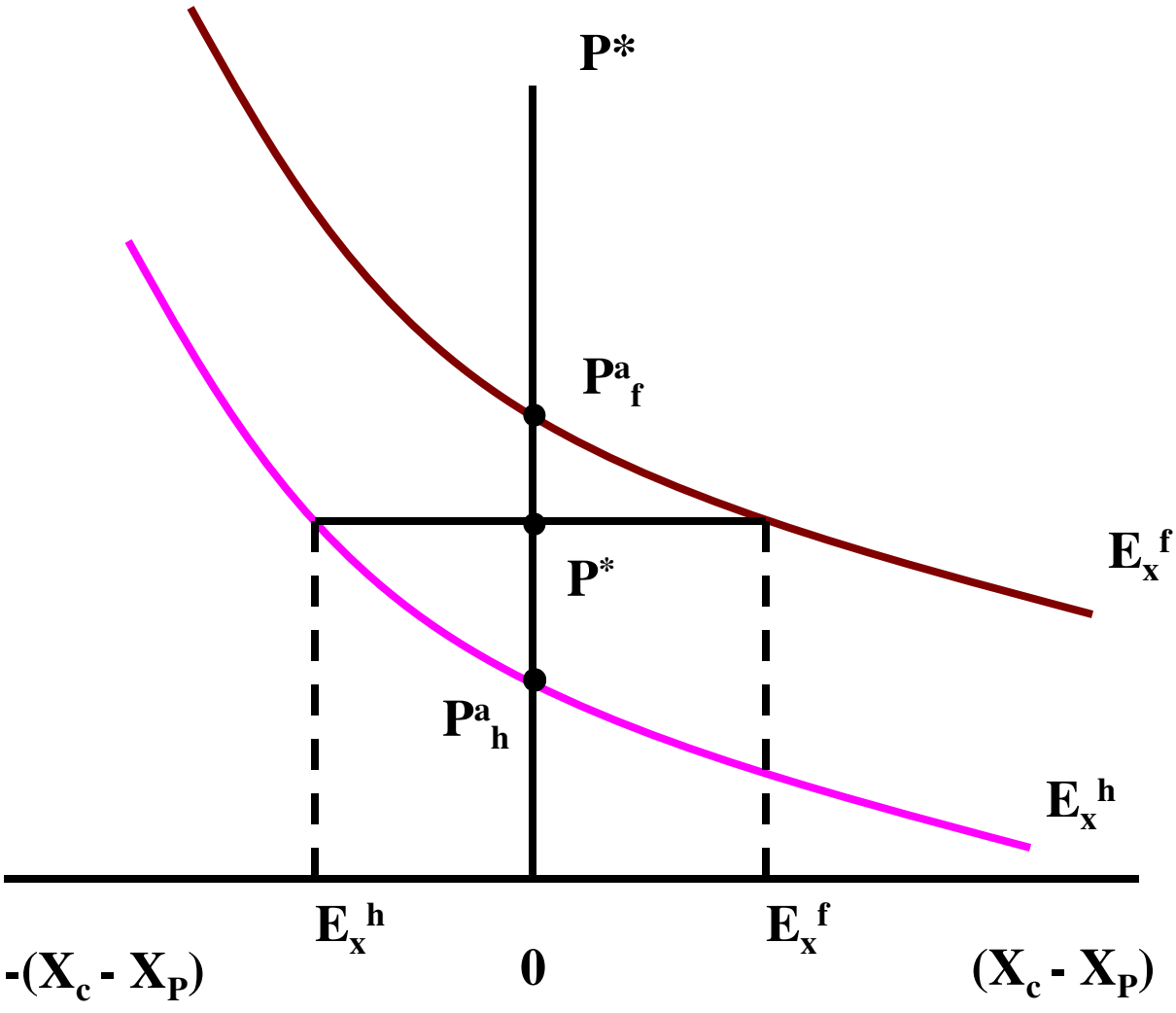


FIGURE 5: INTERNATIONAL EQUILIBRIUM



International equilibrium is:

$$E_x^h + E_x^f = 0 \qquad (6)$$